CEBAF PROPOSAL

Precision measurement of the nucleon spin structure functions in the region of the nucleon resonances

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Abstract

We propose to make high precision and high resolution measurements of the spin structure of the proton and deuteron in the region of the nucleon resonances, at two values of Q^2: ~ 1 GeV^2 and ~ 5.5 GeV^2. Fundamental properties of the nucleon and QCD will be explored with adequate precision to obtain conclusive information. We plan to use CEBAF's polarized electron beam at 6 GeV, the Virginia-Basel solid polarized target with NH_3 and ND_3 materials and the Hall C High Momentum Spectrometer.